

Comprehensive

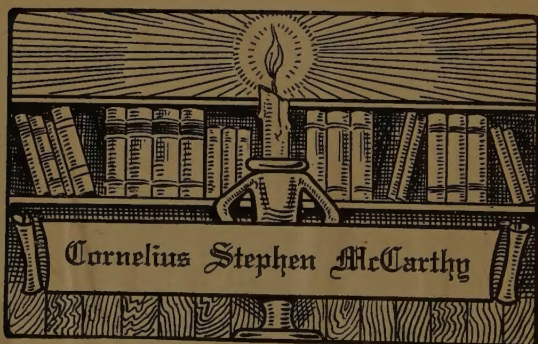
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THE ORGANIZATION OF
A COMPREHENSIVE HIGH SCHOOL



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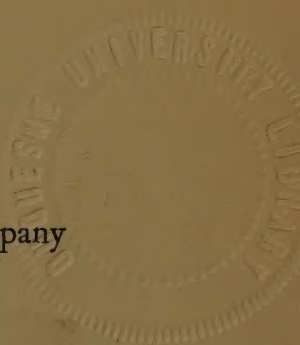
The Organization of a Comprehensive High School

A presentation of plans and devices of the
Arsenal Technical Schools, Indianapolis,
whereby the interest of the individual is
kept paramount

By
Milo H. Stuart
Principal

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FOREWORD

SETTING mile posts of achievement along untraveled roads has been the province and the privilege of every one charged with administration of large high schools within the last decade. In the field of education many old things have passed away; fresh winds of doctrine have come bearing new messages, as well as old messages freshly stated. New standards for universal education of our people have been set up; compulsory school attendance for those of high school age has been established; a new conception of the high school has broadened its function from that of a mere preparatory school for college to that of an institution which is to serve the educational needs of all; new objec-

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tives of education have been set forth; new values for educational purposes have been discovered in fields of knowledge of which the schools previously had not been aware; and rapidly changing social conditions have altered the scope of work of all institutions of society to such an extent that the secondary school stands in a new but very significant and vital relation to the community which it serves.

In a period when these movements were taking place, the Arsenal Technical Schools were established and have been developed. This group of schools, organized as one institution, now consists of a four-year high school, comprehensive in character but with emphasis on the technical, and fourteen all-day vocational schools in which are taught automobile construction, machine shop work, sheet metal work, foundry, plumbing, pattern making, cabinet making, carpentry, electrical construction, agriculture, home eco-

nomics, printing, drafting, and commercial art. In many respects the conditions surrounding these schools are unique. Situated upon the site of the old United States Arsenal which, purchased from the federal government, is now held in trust by the school city for the purpose of public education, the schools have benefited from the start by the traditions of the site and the magnificent advantages of its seventy-six acres of deeply wooded campus, as well as by the urge of the imperative nature of its commission to serve all the boys and girls of Indianapolis.

To fulfill this obligation in every possible way has been the ambition of the principal and faculty through the first thirteen years of the history of the schools. An attempt has been made to analyze every factor which should receive consideration in adapting the work of the institution to the needs of Indianapolis youth. Upon the basis of this analysis the program of courses has been

established and the plans of organization have been worked out. In response to the inquiries of many friends of the schools who have shown kindly interest in the details of its plan of administration, this brochure has been prepared.

For her skillful and energetic assistance in the preparation of the manuscript I wish to make grateful acknowledgment to Miss Margaret McLaughlin of the English Department. To the Superintendent of the Indianapolis schools and to the other officials I would express a word of deep appreciation for their aid and encouragement in making the organization herein set forth a reality.

MILO H. STUART

INDIANAPOLIS, INDIANA

June 30, 1926

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The Organization of a Comprehensive High School

CHAPTER I

Theoretical Background for the Program of Studies

UNIVERSAL education of the youth through the secondary school period is an obligation now generally accepted by the American people. Popular devotion to it as the open sesame to human happiness has crystallized into a vital faith. It is this faith that has brought in and retained the ever-increasing numbers in our present-day public high school. In support of the movement for universal education popular enthusiasm has utilized certain social forces. Compulsory education, child

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labor, and the juvenile court represent the *legal* expression of public sentiment centered upon universal education. Voluntary activities, such as child welfare movements, special scholarship funds, psychological tests and studies, and placement bureaus are further evidence of popular interest in promoting public welfare through *educational* agencies. Moreover, the growing importance of the idea that a high school education is basic for social, commercial, or industrial success — a conception greatly augmented by army methods of selection in the late war — has proved an effective urge in the campaign. In view of all these facts, therefore, it is not too much to say that “education for all children of high school age” is a slogan well nigh universally accepted.

To make possible the realization of the ideal of education for *all*, society has made special provision for those whose abilities and character are peculiar and unusual.

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Special institutions have been established for the blind, the deaf, the crippled; fresh-air schools, for the anæmic; parental schools, for the wayward; and, as a last resort, correctional schools, for the incorrigible. But with the wards of such institutions eliminated, society has charged the public schools with the responsibility of receiving and properly educating all other normal individuals of high school age who present themselves. Therefore, a public secondary school has no choice but to meet the interests, the abilities, and the economic necessities of its every individual student, be he dull, normal, or brilliant, and irrespective of his social position, wealth, creed, or race. The old cry of "kick him out" as a solution for the problem of the troublesome boy has been silenced. It is now the judge of the juvenile court and not school authority that acts as referee in the disposition of his case. And "keep him in" must be the verdict for the sufficiently normal if future

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society is to be spared an unduly institutionalized population.

In this new era, therefore, secondary school administration is charged with the responsibility of so organizing the program of courses within the high school that each student who comes to it may find the curriculum which best serves his own peculiar need. Ideally that would mean that if a heterogeneous population of five thousand five hundred students presents itself, as it does in the Arsenal Technical Schools of Indianapolis, it is the responsibility of the school to offer a program of courses which would make possible five thousand five hundred curriculums, each adapted to the five thousand five hundred individual needs. On first consideration this seems an administrative impossibility. It must be kept in mind, however, that the program of the school offers between two hundred seventy and two hundred eighty-five semester courses. Applying any simple

scheme of permutations to this array of educational offering, it is readily evident that adjustment can be made not only to five thousand five hundred cases but to manifold more. The gist of the problem lies not so much in maintaining the possibility of many curriculums as it does in determining particular subject-matter which should be incorporated in the program of courses of such a school, and devising means for wise guidance of the student to secure accurate adjustment and adaptation of the curriculum to his individual case.

Any analysis of the conditions that determine the demands which the high school should meet reveals a variety of elements which must be taken into consideration in formulating the subject-matter to be incorporated in the program of courses. The needs of individual students must constitute the basis of the analysis, and we must make sure that all aspects of these needs are given

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consideration. No longer is the aim of learning mere personal intellectual perfectionism. No longer is the nature of learning regarded as purely subjectivistic; rather it is considered as an affair of social importance. As a consequence of this newer and more reasonable concept, the educational needs of an individual must be interpreted in relation to his social environment.

Perhaps the inquiry into the nature of his needs may be summarized in the search for the answer to four questions: (1) What abilities (mental, physical, social, and moral) does the individual possess which are worthy of development? (2) What are the forms of activity, mental and manual, which will best develop these abilities? (3) What is the demand of society for these abilities, when developed? (4) What are the personal limitations of his economic and social environment which will be factors in determining the degree to which the

abilities of the individual may be developed? When the administration of the high school has given careful consideration to the educational problem of individuals from these four standpoints, when this study has comprehended a range of cases sufficient to include all those who may be expected to apply for admission to the school, then it may be considered that a basis has been laid for setting up the principles upon which the educational program of the school shall be built.

Numerous studies have been made in recent years which aid in determining the answer to the questions as to what exact abilities an individual possesses. Especially significant has been the use of intelligence tests, informational tests, and mechanical and clerical aptitude tests, all of which are designed to reveal and to measure the abilities and capacities of individuals and groups. Future studies will undoubtedly throw new light on this question as technique of inquiry

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becomes more perfect. Assuming that a large function of the school is the development of those attributes which lie within the range of the term intelligence, the recognition of the three forms of intelligence pointed out by recent writers is essential in the formulation of the work of the modern school. *Abstract* intelligence, *concrete* intelligence, and *social* intelligence must each receive due consideration for development if the school is to perform its full duty. That these abilities exist in varying proportions in every individual no one will question. In years past, the one who presented himself to the school gifted with abstract intelligence (ability with ideas) found full opportunity for the exercise of his powers and the chance for their rapid growth. But he who came wealthy in concrete intelligence (ability with things) found but little opportunity for the exercise of this power. The school served him only in the field of his lesser powers.

If the present-day school is to serve those with concrete intelligence, a sensible range of courses in processes with concrete things must be inaugurated. What this range should be, only constant study and analysis will reveal. Upon the basis of such analysis, modified to a certain extent by the facts concerning the demands of the community for such developed powers, the range of technical and industrial courses within the Arsenal Technical Schools has been established. For the exercise and development of social intelligence every school is in itself a great arena. But for this purpose, school administration should provide such courses as will give an intelligent attitude toward social participation and should so direct the social activities of the student body that true social intelligence and not social intoxication may result.

In giving attention to the various types of intellectual abilities which it should develop, the school does not

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neglect its obligation to the physical training of its students. As we anticipate the changes which will come in the future in conditions of work in industrial and commercial fields and note the proportion of the population working in sedentary occupations, we see the need for greater attention to the education of youth in methods of self-help in physical hygiene and well-being. The ideal of physical training for every student in the secondary school is not yet attained for the demands of equipment and field space, and instructors are still far beyond what can be secured. But with a seventy-six acre campus, the Arsenal Technical Schools are expanding the physical education phase of the daily program so as to utilize to the utmost the opportunity to develop habits that will prove life-long aids to each student in the conservation and development of his physical powers.

When due recognition has been given

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to each form of individual resource within a school community, the next question pressing for solution is "what form of exercise the school should present to give opportunity for the development of these attributes of the individual." In this field of inquiry the student of education has but made a beginning. We have felt quite secure in our belief that for the exercise of abstract intelligence we have been making adequate provision. With our languages, mathematics, history, and science we have felt sure that we offered to youth every opportunity for the training of his abilities with ideas. But even in this field we can no longer feel secure; bold critics have arisen questioning whether these subjects that have come down to us are the best that could have been conserved. That they are the best of which we now know is quite certain. Consequently the Arsenal Technical Schools offer all the academic subjects which modern educational thought

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sanctions and for which there is sufficient demand.

To meet the needs of the second type of individual abilities (concrete), great attention has been given in the formulation of the school's courses of study. Naturally the development of courses for the exercise of abilities with things will grow out of processes which are commonly carried on within the community. Some of these are applicable only to boys; others, only to girls; while another group, such as music and art, are applicable to both boys and girls. Further analysis of the courses offered is made in Chapter II. We are recognizing more and more our responsibility for discerning interests and abilities in the field of art and music, not yet cared for. As the school develops a fuller acquaintance with its students in the years to come, constant modification will necessarily be made so as to include courses which will leave no form of ability or interest neglected.

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For the training of social intelligence, as indicated above, the school itself must always be a great laboratory. In its daily life students learn to be either leaders or followers; they make a reputation either for affability or for touchiness; for generosity or for selfishness. They have opportunity to learn both to give and to take orders. They become agents either of social harmony or of social discord. Every activity of the school is so planned that students may have a chance to develop a social technique which will make them able to adjust themselves to those social groups in which they must live and which will influence them for good. To give an intellectual basis for social activity every course in the range of the social studies is planned. It is the aim that the school may furnish the field for study of society and practice within society, and that the two going hand in hand may constitute the basis for the growth of the individual in social power.

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The answer to the question as to the demand of society for these developed abilities is theoretically of minor importance. But practically it means much to the individual and his economic success that the school train for those activities which will produce the form of economic goods needed by the community. To neglect to develop technical abilities in an age when technical skill is called for at every turn not only applies a concealed though effective brake on mechanical progress but leaves the individual economically handicapped. Consequently, in formulating the program of courses of the Arsenal Technical Schools, although the powers and abilities of the students have been the factors of primary consideration, due attention has been given to those forms of skill for which the modern industrial and social organization calls. Within the range of courses offered in the technical and industrial field only those are included which have to do with

processes for which there is a recognized community demand.

With these three problems solved, the personal conditions surrounding the individual with respect to his continuance at school remain to be considered. Sometimes these personal conditions are economic; the family finances simply will not permit school attendance unless the student may be a wage earner. For such a student sometimes a part-time program with a job outside school is the only way through. This condition is one which must be met by an adaptation of the schedule of school and work to the exigencies of the case. A full discussion of this phase of high school problems appears in Chapter III. For the solution of the school problem of many students, an adaptable schedule of classes is of the utmost importance.

Perhaps the most significant aspect of the fourth factor (personal conditions) is the educational objective which the

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student, by virtue of his own choice or because of social forces acting upon him, has set for himself. In fact the population of the secondary school from this viewpoint falls into three groups: (1) the group which aim to enter college and have definite need of preparing therefor; (2) a group who are bent upon high school graduation and who intend to go immediately thereafter into whatever positions their training and their opportunities make possible; (3) those who do not know whether or not they will graduate from high school, the probability being that they will not.

For each of these three groups the program of courses of the Arsenal Technical Schools makes provision. To the group definitely planning for college the school offers a range of subjects such that each student may include within his own curriculum the particular subjects set forth for entrance by the college of his choice.

To the second larger group, not entering college but completing a high school course, is presented a rich variety of curriculums from which to choose upon the basis of their interests and abilities. At present the following fields are represented :

1. Industrial courses (for boys).
These include courses in industrial processes in wood, metal, pattern-making, and machine operation.
2. Mechanical drafting.
3. Art (including commercial art and architecture).
4. Commerce (bookkeeping, stenography, typewriting, office processes, etc.).
5. Music (instrumental and choral, both theory and appreciation).
6. Home economics (for girls).

For students of this group, for whom high school is the end of school training, the courses included within each of the

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six types named above provide training for very definite useful work. Lest such students lose the benefits of broader training at graduation, provision is of course made that those who elect to do intensive work within any of these fields must include within their curriculums a definite and substantial proportion of academic subjects supplementary to practical study. (The details of such provision are found in Chapter II.) It should be remembered that the second group comprise a full substantial portion of a high school student body; their educational needs and problems call for the greatest attention from high school administrators. From this group will come many of the leaders in the industrial and commercial world in the years that follow. Since the students with college aspirations and inclinations are intimately associated through four years with the group whose interests and inclinations carry, or should carry, them directly into

industry, it is a worth-while objective of high school administration to devise means whereby direct entrance to useful work by a student of this type will give the same social prestige as entrance to college by the student whose abilities should take him there.

A third group to whom the curriculum must minister consists of those whose graduation from high school is uncertain. These fall into three sub-groups. There is the boy or girl who enters with chosen vocational purpose and ambition to train directly for it. He may choose from one of the fifteen state and federal aided and approved trade schools, each of which is an integral part of the Arsenal Technical Schools. There is another type of boy or girl who shows a preference for certain subjects which have vocational significance but who is not prepared to make a definite choice. For a boy of this type is provided a two-year vocation-finding course in the wood and metal trades.

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Here, within the two years, he spends six weeks in each of twelve shops, two periods daily. Should he find a type of work which has for him a consuming interest, he is transferred to the vocational school of his choice. Should no phase of such work make a definite appeal, he has, within such time, received training in tool handling and a perspective of industrial processes which, for his particular type, is invaluable. Finally there is a small group which comes floating in, rudderless, punted into port by a truant officer and with no predilection for any sort of school work. This group will always be a school problem and the object of much effort and attention. A group of such individuals presents a problem for which there is no solution except the attention and guidance of each individual by sympathetic and earnest teachers. But as a group these boys and girls have one characteristic in common: they do not have any vision of their own possi-

bilities; they do not know their latent powers; nor do they know where they might best use them for their own advantage. And furthermore, they have no conception whatever of the zest that lies in doing things worth while. For such students special plans of organization have been adopted. Courses of study have been outlined and formulated on an individual lesson-sheet basis in order that there may be hope for credit for each pupil, no matter how far advanced a semester's work may be when he enters. Especially to meet the particular need of a pupil of this type, a course in Occupational Civics is planned which has for its definite objective the enlargement of occupational vision that may develop into a vital vocational interest.

With so much stress placed upon the development of individual abilities, which tends to produce unlike-mindedness, there is an equal obligation on the part of the school to provide a cohesive force which

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will harmonize individual differences upon the plane of an organized society. In recognition of this obligation a considerable amount of social and civic study of an integrating nature must be provided through the medium of history, literature, language, and the sciences, that these individuals of different abilities may work together with common understanding of each other's needs in solving the problems which are of concern to their common welfare. For this reason no neglect of such study is permitted. Even the pupil in the most intensive vocational course must give fifty per cent of his time to these integrating courses. Furthermore, it is the established policy of the schools that in fulfillment of the thirty-two credits of work required for graduation, each individual curriculum must have included sixteen credits of work (or fifty per cent) from the academic group of subjects.

Thus the Arsenal Technical Schools are striving to provide in the machinery

of their organization an opportunity for the individual to work out his own particular needs without sacrificing that common perspective which all must share with the community. We believe that if our school should attempt to make a boy of high school age a mechanical expert without a grasp of the social problems of the community at large and without sympathy with the contribution of the past and his debt to it, it would be failing in its duty to the individual and to the state. But on the other hand, if such a school should withhold that training which looks towards the economic independence of the individual, it would rob him of faith in his personal competency to take his place as a productive member of society and would deprive society of the product of human skill. In the daily life of the school every energy is so directed that these two educational needs of society at large may be served.

CHAPTER II

The Program of Studies with Reference to the Individual

THE problem of providing a curriculum adequate to serve a student body with school expectancy so varied as to include a college-preparatory group, a non-college-preparatory high school graduating group, and a group who may or may not graduate, challenges administrative skill. Building the structure of such a curriculum involves an analysis of the four basic problems of the secondary school as set forth in Chapter I and a practical adaptation of the program of courses to each group and to each individual within such groups. The sequence of its courses must embrace a double intent. While giving special consideration

to the "dropping out possibility" inherent in every student, which is due to economic stress and personal dissatisfaction, the program of the school at the same time provides safe leads and guides to further preparation both within the high school period itself and in higher institutions. To neglect either of these factors would be to lay an unsound foundation for any curriculum.

In dealing with a group whose school expectancy is prolonged into college, the secondary school must necessarily accept conditions imposed from above. The college preparatory course, therefore, can be uniform only as college entrance requirements become uniform. A comparison of the entrance requirements of the liberal arts and technical colleges of the Eastern and the North Central territory which graduates of the Technical High School attend reveals the widest divergences and indicates the problem of the secondary schools with reference

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to college entrance. A brief survey of conditions may illustrate the problem. Any college of the North Central Association will admit without examination a graduate of any accredited high school in the territory in so far as he has pursued those courses stipulated by the particular institution as essential for entrance. Eastern colleges, on the contrary, have adhered to the plan of entrance by examination. Recently, however, a departure has been inaugurated whereby the highest ranking section of students of the high school graduating class may be admitted without examination. In some cases an intensive examination on a few subjects is accepted as evidence of quality of scholarship, and high school records are trusted to show range. A number of colleges in the North Central territory will accept students on condition. Eastern colleges, on the other hand, and some in the Middle West demand absolute conformity to requirements.

In addition to the above, with specialized institutions demanding specific preparation, it is evident that a norm for college entrance does not exist. A safe approach, however, is a high school course which includes English, three years; mathematics, two years; foreign language, two years of one language; science, one year; history, one year. But deviation from this general program is common. Within the liberal arts group, for example, the language requirement ranges from a minimum of no units to that of six units. With one institution, three units of Latin with three additional units of a specified language are required; with another the additional units of language are elective; with still another, four units of Latin and two units of another language are required. Some colleges refuse to grant credit for a foreign language pursued for but one year; others will accept it towards completing language entrance requirements. A number

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of colleges place no restriction on English requirements either regular or specialized. Others restrict it to regular units of composition and literature and specifically designate any other courses which may be acceptable.

In the matter of electives the same wide divergence is in evidence. Some liberal arts colleges in the North Central Association accept as many as five units of vocational work. In some cases as many as four units in one field may be permitted; in others only one unit. In the East no vocational subjects are accepted.

There are colleges which limit neither amount nor kind of music so long as the total credits under consideration in music are within the elective requirement of the particular college. One will accept harmony only; another both harmony and appreciation. A certain college with a music department highly organized to train for musical careers will accept only one unit of high school music; if art is

offered, it must be included within the aforesaid one unit. Due to these internal eccentricities of college organization a similar lack of standardization prevails with respect to military training and physical training.

No intelligent criticism can be aimed at the colleges themselves for the eccentricities which the above random sampling reveals. Colleges are already overcrowded. Besides, many of them are privately endowed and consequently privileged to set their own standards. But the condition, nevertheless, confronts the secondary school and demands great flexibility of curriculum adjustment to meet the needs of students preparing for college. The only effective means of meeting the situation is the adoption of a plan of organization that will make possible an individual curriculum for each student, coupled with a plan of college guidance that will function. By such a scheme every student in the Technical

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High School is enabled to meet without handicap the requirements of the higher school of his choice. The obligation must be impressed upon the student and the home to decide on his chosen college early in his high school career in order that the school may provide exactly that preparation which the particular college demands. As an aid to the underprivileged student within this group the school is ever alert for available scholarship funds offered by higher institutions or by any philanthropic agency.

There is another aspect of guidance of the student whose aims are directed toward college which the high school must not neglect. For the secondary school to continue to prepare a student for college and to encourage him in that aim when every aptitude and interest indicates that his success will lie in other fields of learning is rendering the student and the community a pronounced disservice. The school should discover those

who are seeking college halls for mere social prestige and should supplant false aims with true ones. To attract the interest of such students to preparation for a serious life objective within high school experience would render valuable service to higher institutions and at the same time would direct the individual into an environment for learning much more favorable to his own proper aptitudes and skills.

It is to serve such a student as well as the one whose school opportunity is limited to secondary education that certain advanced courses in the Arsenal Technical Schools are offered. These highly specialized courses, which lead to graduation and which are over and above those found in the curriculum of the traditional secondary school, are for the purpose of furthering the development of skill already acquired in previous training in a given field. They embrace courses offered two and four hours daily

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during the junior and the senior year respectively. Many of them, such as applied electricity, mill work, shop processes in foundry and machine shop, machine drafting, architectural drafting, and commercial art are in the nature of junior engineering. In addition to these there are advanced courses in the commercial field — business organization, given in the senior year as a special provision for the young student of executive type with managerial ability who through personal connection has definite hopes and prospects; advanced bookkeeping and accounting, sufficiently comprehensive to give the student some assurance in coping with budgets, revenue reports, and accounting systems; office practice, to meet the needs of those completing the stenographic course and to train in the procedure of the commercial office; and salesmanship, by means of which articulation with downtown firms is established. Special emphasis is given to the

work of girls in salesmanship, as well as in commercial millinery, dressmaking, nursing, and institutional cooking. In this latter field a highly practical course affording a commercial outlet through the Tech Bake Shop has been established.

While the administration recognizes and accentuates the function of guidance within the group for whom high school is the conclusion of school training and especially designates those who are responsible for the guidance work, the schools do not throw this work to an isolated department. They rather regard it as a matter of attitude on the part of the faculty. This attitude plus the definite system of checks and balances within the curriculum has proved workable in directing students into specific grooves of service useful to society. A graphic representation of how such guidance actually functions may be seen in the following tabulated results of a study

the social importance of each type of work.

This chart serves to illustrate the potency of the major and minor sequence scheme as a means to accurate guidance. It defeats snap hunting and stiffens up vocational objective. Since girls without technical majors and with no stated occupational preferences are inhibited by natural reticence from declaring for the occupation of homemaking, the scheme proves particularly effective for them. Since results show only twelve boys without technical majors and with no occupational choice, the guidance scheme working in the Technical High Schools may justly lay claim to some degree of merit.

As a means of making such analysis more than informational, a committee of twelve selected teachers working through the personnel departments of various firms over the city is able to place these graduates in firms of the city to the advan-

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tage of the firm, the pupil, and the school. The occupational information accruing from their activity in this connection is pooled through the secretary of the group, who studies the results with the purpose of discovering whether or not the school is articulating properly with community wants. The information is later retailed to the student body at large through school agencies, public speaking classes, and the student school paper at the season when choice of studies is at hand. Such is one of the many devices used to saturate the school atmosphere with the importance of the idea of purposeful guidance for every individual within the entire plant.

In dealing with the third group, whose school expectancy is a matter of greatest uncertainty, the administration makes further curriculum distinctions. For the boy or girl limited to two years of secondary education the Arsenal Technical Schools offer fourteen distinct two-year

trade schools or two years of work in the Technical High School itself. These schools include: auto construction, machine shop, sheet metal, foundry, plumbing, pattern making, cabinet making, carpentry, electrical construction, drafting, commercial art, agriculture, home economics, and printing. These schools, in conformity with the Smith-Hughes Act, are open to election by eighth-grade graduates.

What efficacy a two-year unit of vocational work has as contrasted with a unit of another duration is a question which may legitimately be asked. In the Arsenal Technical Schools, due to the coöperative relation between the school city and the United Typothetæ of America, a highly organized four-year trade school in printing is maintained in an ideal trade environment. In the case of the other schools, however, it has seemed best to give only the first two years of apprenticeship and to allow employers to direct the remaining years under actual

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shop conditions. Should it develop that a trade school boy finds himself able to remain two additional years, it is possible through the individual curriculum plan to carry him on to high school graduation within the four-year period. Furthermore, the two-year plan coördinates admirably with the Indiana compulsory education law, whereby attendance to the age of sixteen is mandatory. The certificate awarded at the successful termination of a given two-year vocational course contributes an element of contentment to those students who feel they are being held in duress, by giving them a definite goal of achievement toward which to strive.

A student enrolled in any vocational school may complete his two-year vocational course, which consists of four periods per day of trade work, and in addition the three periods in applied drawing, English, and mathematics as required by the Smith-Hughes Act.

Should a boy decide he has made a mistake in his choice, it is possible, if his case is convincing, to make readjustment for high school graduation without loss of credit, providing his program satisfies the major and minor sequence requirements referred to above.

With the boys and girls who enter a vocational school with occupational objective provisioned, thus cared for, all others are enrolled in the freshman year of the Technical High School, which, though it is not segregated from the vocational schools in respect to physical equipment, nevertheless constitutes a distinct curriculum unit. The choice of studies available and the restrictions placed about the choice in this year are planned to lead the student into a choice of curriculum which will give indication of his aptitudes and which will enable him within the year to develop a basis for making an even more purposeful selection of subjects at the close of his ninth year.

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As a means to this end the program of studies available for entering ninth-year students is limited to the following subjects. (In order that the reader may be better able to understand the plan a transcript of the first year's work on the printed program of courses of the Technical High School is given below.) In analyzing the work of this first year the reader should keep in mind that —

1. Each student is required to take four full-credit subjects to which one half-credit subject may be added. (Chorus, physical training, and mechanical drawing, which must be taken with building-crafts, are half-credit subjects.)

2. English and one form of mathematics (either algebra or commercial arithmetic) must be elected. This leaves a free election open to the student for completing his program to the number of subjects required.

The Program of Studies

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FIRST YEAR

FIRST SEMESTER

SECOND SEMESTER

a. ENGLISH I (3 years of English required)

a. ENGLISH II

b. {	One year of Mathematics is required.	b. {
	MATHEMATICS I (Algebra)	
	Elected by students preparing for college.	
	OR	
	COMMERCIAL ARITH. I	
	Of practical value to pupils wishing to take this as the required year of Mathematics, or as a fuller preparation for Algebra later.	

MATHEMATICS II
(Algebra)

COM. ARITH. II

c. {

LATIN I

Because of the basic relation of Latin to English as well as to French and Spanish the student who contemplates including Latin in his high school course is advised to elect it in the first year

c. {

LATIN II

LATIN IIE

For those whose purpose makes it advisable to drop Latin at the end of the first year and who wish to derive its greatest value in relation to English.

FRENCH I
SPANISH I
GERMAN I

FRENCH II
SPANISH II
GERMAN II

d. CIVICS I (Group Life)
(Open only to beginners)

d. {

CIVICS IIB (Boys)
(Occupations)

CIVICS IIG (Girls)
(Occupations)

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f. BUILDING CRAFTS I *f.* BUILDING CRAFTS II
(Mechanical Drawing I-IV [below] must be taken with Building Crafts.)

g. Mechanical Drawing I *g.* Mechanical Drawing II
(Cannot be elected without shop work below English V)

Courses listed under (*g*) may be combined with either (*f*) or (*h*) in making up majors or minors.

h. FREE-HAND DRAWING I *h.* FREE-HAND DRAWING II

i. CLERICAL PRACTICE I *i.* CLERICAL PRACTICE II

(Open only to beginners)

(May be elected only with Commercial Arithmetic above.) It is offered for those students intending to stay in high school but a short time and who wish to get intensive training for some of the many elementary clerical positions.

j. CLOTHING I *j.* CLOTHING II
(Cooking I is open to beginners electing Clothing I also.) (Applied Design)

<i>l.</i> {	<i>Chorus I</i> Harmony may be taken in the first year by students presenting evidence of special ability in instrumental music. { <i>Orchestra</i> { <i>Boys' Glee Club</i> { <i>Girls' Glee Club</i>	<i>l. Chorus II</i> A student who maintains a satisfactory connection with any of these activities until graduation may be granted one credit.
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Class instruction on instruments preparatory to band or orchestra is offered without credit.

- m.* { *Physical Training IG Physical Training IIG (Girls)*
 (Girls)
 Physical Training IB Physical Training IIB (Boys)
 (Boys)

All full-credit subjects have the possibility of advancing through major sequences and even beyond. Two of them (building crafts and civics) have special significance for students of uncertain vocational objective or who have no choice. Any one of the first-year subjects, with the exception of English, algebra, and foreign language, may be dropped at the completion of one year if such dropping is consistent with the student's vocational aim. Only a written disavowal by the home of college entrance purpose will release a student from further study of formal mathematics or foreign language for at least four semesters if once elected. In cases in which students are preparing for colleges which have unusual entrance requirement, adjustment is made between the home and the college guidance department and filed away in the

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student's permanent record. A similar procedure is followed in every case of change of vocational aim, whether or not the question of college entrance is involved.

A student electing clerical practice is required to carry commercial arithmetic as supplementary thereto. This combination, as the printed program points out, is for students whose period in school is brief and who plan to prepare for elementary clerical jobs. The assumption is that these students are remaining in school for at least one year. In case the student's school interest is awakened or his opportunities become larger, he will find that the year of work will have been given full credit toward high school graduation. To complete the first-year curriculum a boy may choose one additional subject from the following: free-hand drawing, building crafts (with mechanical drawing), or civics. A girl may choose either free-hand drawing,

clothing, or civics. As a matter of fact, the type of student whose election of a clerical program indicates aversion to creative handwork naturally will elect civics as the fourth subject. The limitations of the program thus forces him into a subject the primary objective of which is to expand his horizon and to awaken his interest in a study of types of occupation with the idea that he may see the relation of his abilities and interests to the scheme of world work. Sometimes, when a student of ability is convinced that in addition to clerical practice, preparation in bookkeeping, stenography, typewriting, and office practice will ultimately lead him into executive and administrative jobs in the world of commerce, he is attracted to remain full four years. The course in ninth-year civics by the same process of elimination catches up the snap hunter who is marking time to satisfy the compulsory attendance law and who is headed for

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that great army of occupational drifters who are helpless in our economic scheme. The course aids in saving him from such a future if he possesses patent abilities that can be made useful. Although designed especially for short-time students, this course in civics is open and helpful to others as well. It may combine with a college preparatory program which excludes or defers a technical major. Occupational information gained in such a course often serves to reshape objectives of the student towards further training or to attract him to fields totally outside of the range of those with which his limited environment has made him acquainted.

The year-course in civics in the ninth year is of especial significance in meeting the problems of the entering youth and the problems of the high school as well. During the first semester attention is focused upon an analysis of the problems of group life. The aim is to change an

attitude of mere acceptance of the community into an attitude of consciousness of the community and a deliberate analysis of the groups which make it up. Emphasis is placed upon the study of problems of coöperation which arise in the school, into which the freshman enters as into a new country, with strange laws, traditions, and customs. This school community is but a prototype of that larger society where he will later take his place as a leader or follower. The student is made not only to analyze the problems of his school group, but to study similar problems of coöperation in industrial, recreational, or governmental groups as well. When an intellectual basis for appreciation of social organization has thus been established, the essential factor in citizenship is to get the individual to sense his own peculiar relation to such an organization and to get himself best adjusted therein. For of all relationships the economic one is most

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vital. It is the adjustment which he establishes with society for the purpose of making a living that will largely determine the place he will take as a citizen of his community. Logically, therefore, the second half of this year of civics is given to a study of occupations in their social setting. In this second semester, the boys and girls are segregated, as the study must necessarily be adjusted to the interests and demands of each. But in both groups the aim is the same — to impart such information, to awaken such an interest in the world's work as will prompt the student to seek that place in the economic organization of society which will make him most valuable to himself and his community. Occupational study for boys follows the ten larger headings of the United States as given in the census. The imposing detailed list of separate occupations therein enumerated as against the mere two hundred at the beginning of the nine-

teenth century is convincing proof of the need for study of at least the outstanding jobs in our day when the "No Admittance" sign of industry shuts a boy out from sympathetic understanding of even his own father's job. Occupational study for girls, following the evolutionary history of woman's work, starts with the home as the fountainhead whence has sprung organized skills of women in foods, textiles, and hygiene with their far-reaching ramifications into modern industry and professions. It stresses the importance of the occupation of successful homemaking with especial emphasis on the various occupational aspects of the care of children, the one unmistakable responsibility of the homemaker which not even the most ultra-specialized skill of an all-absorbing social and economic evolution affecting the home has succeeded in lifting. It sets forth the ever-increasing importance of women in the field of commerce in an economic

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world where "big business" is the order of the day, constantly creating new jobs for women in insurance, sales, advertising, and secretarial work.

This course in civics thus attempts to strike at the basic elements of citizenship training — consciousness of the facts of community life and organization; knowledge of the principles and laws which are basic to the operation of community life; and, above all, the recognition of the problem of making one's abilities contribute to the service of the community. Thus by giving the first semester to the first two of these objectives and the second semester to the last, broad citizenship values accrue to the course in occupational information. It is superficial indeed to present any study of an occupation without establishing its social setting; on the other hand, for citizenship purposes, any broad study of social setting without reference to the individual's economic place therein is most incomplete.

It is the insistent fact of large-scale production that imposes upon the secondary school the obligation of purveying occupational information to the citizens of the junior republic. Due to large-scale production jobs have become so highly specialized even within a given trade that the popular concept with respect to any one of them is most hazy. The standard of output which production has been forced to assume has so formalized industry that no longer do its processes fall within the observation of the youth as they did in days of old when father and son worked together as master and apprentice. In recognition of this changed social condition, the course in building crafts is offered in the Technical High School for the boy who wants to do something with his hands but is not sure what. He is given the opportunity in this first year to work six weeks, two periods daily, in each of the following lines: carpentry, cabinet making, wood

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and metal finishing, cement work, electrical work, and plumbing. An additional year's work is offered for the second year in metal crafts, consisting of sheet metal, auto shop, forge shop, machine shop, pattern making, and foundry. The student thus acquaints himself with the range of processes of the essential productive industries of the community.

The outlook of such a course is three-fold: (1) It may serve as a "try-out" for a boy contemplating any of the two-year trade schools after either the first or the second year and it affords advanced standing in vocational work to the amount of one semester; (2) it is the best possible lead into certain of the two-hour and four-hour advanced technical courses given in the third and fourth years of the high school; and (3) it is in the way of a pre-engineering course for a student looking forward to an engineering major in a technical college. A boy completing such a course, it is safe to say, is on the

road to arrival in a chosen life pursuit. Thus in the first year there are two definite means by which occupational information may be imparted and occupational purpose developed: first, by the definite course in occupations, and second by the course in building crafts, which is occupation-finding in character. Of especial significance in the whole plan is the fact that any boy with rather uncertain vocational purpose will by the voluntary choice of his own curriculum fall into one or the other of these courses.

The purpose of these vocational index courses built around an academic core in the first year is apparent. They distinguish this first year as a period for directing students into proper educational and occupational channels, so that they may make the most of the tenth, eleventh, and twelfth years of school life. With its 8-1-3 plan it does all, may it be submitted, that any junior high school does and makes important additions.

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Briggs,¹ by way of discovering the relative importance of elements characterizing the junior high school as a distinct institution, in the minds of sixty-eight outstanding schoolmen, collated the following results, which appear in the order of frequency.

Provision for individual difference	67.7
Departmental teaching	51.5
Retention in school	48.5
Differentiated curricula	41.2
Combination of grades 7, 8, 9 . .	41.2
Enriched curricula	39.7
Promotion by subject	39.7
Gradual transition	36.8
Economy of time	29.4
Homogeneous grouping	23.4
Exploration of interests, aptitudes, and capacities	22.1
Supervised study	20.6

Other elements grading down to 5.9 per cent include segregation, flexible curricula, provision for social interests,

¹ *The Junior High School*, p. 49.

prevocational training, reorganization of subject matter, satisfaction of community needs, elimination of undesirable subject matter, educational guidance, vocational guidance, trade training, and encouragement of initiative.

Obviously many of these elements are not peculiar to the organization of the junior high school whether it be 6-3-3 or 6-2-4 or any other combination. The vital elements listed above will be found in the 8-1-3 scheme of Technical High School as previous discussion has suggested. Added advantage may be cited in the postponement of vocational choice to the period approximating the apprenticeship age, the economy of an extensive shop program, and the pursuit of prevocational work in a vocational shop atmosphere with standard equipment. Given by teachers with trade experience and expert first-hand knowledge in their respective fields, prevocational work is raised far above the level of mere

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dabbling, and this fact is in itself a distinct asset in guidance. Moreover, the 8-1-3 combination represented by Technical High School, co-eval in development with the Indiana compulsory education age limit, has the advantage of one break only through the twelve-year period, and this break comes at a time previous to the age limit of attendance as fixed by the law instead of being coincident with it as it must be for many students completing the junior high school. The continuity of contact with the teaching staff through the ninth and tenth years is a powerful force in pulling the student across into the senior high school period. The fact that he is in harness and in motion with the same teachers makes the transfer more certain. The presence of older students in a school very diversified in its interests proves a magnet attracting many over-age students who would not otherwise come.

The individual program mapped out

in the freshman year becomes the index to the upper three years of secondary work. Or it might be thought of as a log-book charting a student through strange seas of opportunities. The strongest possible motivation lies in free choice of subjects as the basis of interest. This is fostered and deepened under the sympathetic guidance of friendly teachers. Deviation from such choice is guarded by a system of checks and balances within the curriculum plan.

On completion of the freshman year the student stands, ticket in hand, like the traveler in a great modern terminal. Many trains stand ready. It is sufficient for him to know his desired destination. Officially directed he mounts and pursues the route direct to a coveted goal.

CHAPTER III

The Daily Schedule of Classes with Reference to the Individual

TO one who is but casually acquainted with the problems of high school administration, the making of a schedule of classes would seem to be but an incident and to have but little effect on the broader educational policies of a school. But when the interests of the individual student are at stake, it soon becomes manifest that the schedule has much to do with the degree to which the school is able to solve his unique problem.

Educational study has not yet been exhaustive enough for anyone to make a dogmatic declaration on the matter of the high school schedule. Ordinarily it is made on the basis of expediency, its form being determined by the demands

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of the local situation. In many places custom has determined its form, and but little consideration has been given to the reasons for its existence as it is. The fact that one high school operates on a six-period schedule, another on an eight, another on a ten, and perhaps some few on a twelve, indicates that certain factors are at work to cause this wide variance in practice.

In formulating a given schedule a number of objectives may have been considered: distribution of the time of teachers on an equitable and fair basis; proper attention to each subject without undue favor; flexibility sufficient to make possible transfers and adjustments of students' programs; avoidance of excessive congestion and consequent conflicts; economy of use of the plant and equipment; and in many institutions the mere problem of scheduling in such a manner that all students may find a seat and a teacher.

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View the problem from any standpoint that we wish, the primary objective of schedule-making must be to arrange the classes so that the school may be flexible enough in its organization to meet the needs of the individual student. When the schedule is formulated with this as the objective, all other worthy objectives become secondary thereto, and are usually met by the attainment of the primary one. In other words, if the schedule will meet the problems of all individuals, the plant is being most economically used.

After experiment with other forms of time schedules, the ten-period day has been found in the Arsenal Technical Schools to be the most effective for encompassing all curriculum plans and thereby serving the individual to the best advantage.

Much has been said of late in educational circles concerning the ten-period day. The weight of opinion growing in

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its favor would seem to indicate a wide acceptance for the future. Reasons for this trend are obvious. In consideration of the vast sums of public money invested in housing and equipment facilities, scientific management demands full-time operation. The just return which society expects for its expenditure is the highest degree of welfare possible for the individual student. Not only must the school train him for useful service in a complex social system, but it must set up safeguards during the period of adolescent training lest the bad influences which are at variance with school purpose defeat the very institution of the school itself.

Through the adoption of the ten-period day, conditions exceedingly pertinent to high school administration have been met.

1. It makes possible a program of school work which will enable a student who must work while attending school to have part of a day for work and part for school.

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2. It makes it possible to place a premium upon personal responsibility; the student who has the ability to do satisfactory work without supervision can be given a condensed program while the one who will work only under supervision can be given a program including study periods and conferences.

3. It makes it possible to meet the problems of leisure time for the student whose free afternoons are otherwise unused.

The increasing emphasis which educational administration is placing on the problem of caring for students who are economically restricted is significant. It indicates the comprehensive aim of a system subsidized by a society which includes every individual in the program of education that it sponsors. Some years ago Dean Schneider of the University of Cincinnati, out of a rich personal experience, became a real pioneer in solving the problem of higher education for

the needy college student. The part-time plan in operation at Cincinnati, for which he is responsible, alternates four weeks of practical experience with pecuniary returns with four weeks of theory in the college classroom. Various modifications of this plan have since been utilized. Within the last ten years the Smith-Hughes Act, broadening the application of part-time education, has provided large sums of money to be expended in publicly controlled schools which offer to students over fourteen who have entered upon employment, subjects which aim to enlarge civic or vocational intelligence. With this legal sanction, and with the educational age limit on the increase, as evidenced by legislative enactment in many states, the future of the part-time school as a unit of secondary education seems fairly well established.

Of the various types of continuation schools which have come in as a result of federal and local legislation, the fifty-

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fifty plan for a team of two boys, one boy in school and one out on the job within the same day, works best in the Arsenal Technical Schools.

The ten-period schedule makes it possible for one boy to spend five periods in school in the morning, while the other is on the job; in the afternoon they merely exchange places and as a consequence two purposes have been met. Both boys receive school training to the maximum which their out-of-school work schedule really makes feasible, and both are able to earn an amount sufficient to make it possible for them to continue in school. In addition to this rather evident advantage there is the one so often overlooked — that both boys are helped by the incentive of contact with a practical wage-earning job and the supervision and advice of a youth-loving employer. On such a schedule the boy may have a four-period vocational shop program with one supplementary course, a two-

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period prevocational program and three other courses, or four periods of academic work and a study period additional. The ten-period schedule makes it possible for both boys to combine work and study most advantageously.

Since every high school, vocational or purely academic, within any state accepting the Smith-Hughes Act, is empowered by the same to offer education to increase the civic usefulness of workers over fourteen who have entered upon employment, the part-time school is worth consideration as a legitimate unit within all secondary schools. It is the logical place for the continuation of school for a boy out of school on a labor permit. The scheme which provides two boys daily on the same job creates few complications with employing firms and ordinarily meets the demands of any industrial situation. Any secondary school which aims to meet social stress must include in its daily schedule ten periods of work.

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From the standpoint of development of personal responsibility (an important secondary school objective), the internal structure of the modern high school thrives best on a ten-period day. It enables administration to make schedule adjustments whereby individual differences are met and ministered to upon the basis of scholarship rating.

For example, the honor-roll students in the Arsenal Schools are given schedule consideration which their high standard of scholarship warrants. The results of their studious efforts give evidence of the habits of concentration and ideals of accomplishment they have attained. Since the home habits and influence of such students are evidently conducive to study, the school, in order not to dissipate fine habits well established, relinquishes responsibility for their study time. Honor students, therefore, are given a condensed program, a distinction popularly regarded as the *summum bonum*

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of student life and one which provokes exertion on the part of the able but indolent. This plan has the merit of relieving the load on school machinery which can be shunted off to permit of increased efforts in quarters where they are needed.

Below this top layer lies a scholarship stratum made up of the so-called average students, who "get by" on average or poor grades. They need supervision in order to raise their standards of work to a plane comparable to their abilities. For these students the ten-period day permits extended program assignments of four double-hour, double-sized classes grouped homogeneously. An eight-hour outlay, plus one hour for lunch and one hour leeway, consumes the time allotment with best advantage to the individual. The classwork is conducted upon a directed study basis. The teacher is free to use *a-b-c* grouping for the purpose of special assignments on the basis of individual shortcomings. Contact in such classes

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during the double period affords the alert teacher means of divining causes which contribute to inferior work. Identity of class and study teacher eliminates misunderstandings as to exact requirements within a given assignment. By this arrangement the school supplements the home in providing proper time, place, material, and atmosphere for study, all of which are essential if a student is to live up to the best that is in him. And all this is done without additional instructional cost.

The ten-period day functions doubly in serving another class of students; namely, those who because of inability, lack of interest, or lack of purpose fail in one or more subjects. By distributing the programs of such students over the entire day, class load within the school is kept properly balanced, while they themselves are at the same time benefited by assigned study periods in proportion to their failures. Grouped in large study

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halls and blocked according to subject matter, they are readily accessible whenever occasion arises. Teachers in charge of such students are greatly aided by cadets from the teachers' training department of Butler College, a local higher institution. Any block of students may be taken by a cadet teacher to an adjoining room, where, under the supervision of a competent teacher from the regular staff, she takes responsibility for the teaching of a class. It in no way substitutes for regular class work, but is a gift in fee simple to the student. With few exceptions the extra help enables the student to keep abreast of his regular class and save his credit.

Beyond the pale of these three regular groups ranges a class of students, who, if not properly segregated would soon make depredations costly in school efficiency. Various types are included within its number. There is the dull normal student whose thinking processes are such

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that he is unable to keep the pace of his classmates. If permitted to remain, he would soon become a disturbing element, distracting the focus of group instruction. On the other hand, there is the boy or girl held out of school by protracted illness. When he returns with strength depleted, to regain what he has lost, he must be protected against an unwise expenditure of energy on a well-nigh impossible task. Lastly, we have the world-old truant boy who attends with what regularity he may, until convinced by truant officer and juvenile judge that he must choose between school and something not so good. In answer to the mandate of the law that all of these, irrespective of shortcomings, must be incorporated, the lesson-sheet department of Technical High School has been inaugurated to serve students of the above description. By means of the lesson-sheet work each individual, no matter what his handicap due to previous non-

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attendance, is enabled to earn credit as his effort and individual abilities make possible.

In this department it has been found feasible to offer only academic subjects. Each semester course comprises from forty to sixty lessons constructed by faculty members who are temperamentally sympathetic toward this type of school work. Each sheet is self-explanatory to the student. With teacher suggestions and advice the student progresses at his own rate of speed and checks in perfect papers with the teacher in charge. The lessons parallel regular class work. Should the student overtake his class before the lessons are accomplished, he is transferred to regular classes in those cases where it is desirable for the individual in question. Otherwise he remains, completes the course, and starts a new one.

It is readily perceived that the ten-period day is invaluable to this class of

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students to whom the element of time is of paramount importance. Should it prove expedient, he may curtail his program, as the facts in the case warrant, to three or even two subjects. In any event, he is tided over the semester and is given a chance to start an election in the new term with something accomplished and with reasonable hope for success in the future. He has learned the credit value of honest, individual effort.

Aside from the honor student whose intellectual curiosity consumes his time beyond school hours profitably, and the part-time student whose job keeps him headed in a safe direction, what secondary student is not benefited by the ten-period day? All others have demonstrated their inability to cope with study problems unaided. Where shall they learn to steel themselves to those mental and moral habits which best serve a society unstinted in its support of the

high cost of education? Surely not at the *matinée*, movie, tea *dansant*, or like institutions insinuating themselves so insidiously into the leisure afternoon hours of our modern high school students.

No charge of added burden to the high cost of education may justly be attributed to the ten-period day. Statistics recently compiled in the Technical High School on the cost to the school city per student-period of instruction and supervision show a resultant of eight and nine tenths cents. If students can be expertly cared for eight hours daily in an institution highly specialized properly to train adolescent boys and girls during the period when their greatest business in life is to receive this training, at a cost so nominal to the public, it is the duty, it seems, of administration to take advantage of every opportunity for extending such service for the public good. For to train youthful citizens in constructive use of leisure, the means

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whereby mankind educated himself before great systems of education loomed upon his horizon, would be to make a contribution far-reaching in its remedial effects on present-day social unrest.

CHAPTER IV

The Function of the Teacher with Reference to the Individual

IT is now generally admitted that the public secondary school exists to provide opportunities for that type of learning, the ultimate aim of which transcends the mere intellectual perfection of the individual. The modern school concerns itself rather with the *social reaction* of intelligence when trained, since that is the product of learning which is of communal value. The learning process, then, from the point of view of school administration, should include every activity within the range of the social contacts of the student.

The administration of a secondary school therefore must concern itself with

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every form of activity of the students within the school. Since the work of the classroom is the care of the educational process, the character and spirit of work done is of greatest significance. But for the student of secondary school age, other activities are tremendously vital. His social activities, his home problems, his games, his personal habits of health are forces which make possible that intellectual development for which the school strives. Since in this day the school cannot assume that these things are cared for elsewhere, it must carry the responsibility for them as part of its work.

The teacher whose conception of his professional function aligns itself with administrative policy within the Arsenal Schools must act in the double capacity of classroom instructor and personal advisor to all boys and girls for whom he is responsible. For teachers to assume the attitude of a certain irascible college

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professor who boasted he taught chemistry, not students, proves most unwholesome. No teacher may be so detached as to set up a given subject as a fetish, but must regard it rather as a means to an end in developing personality and character in youthful citizens entrusted to his care. Even though we grant that any department of knowledge is a precious inherited tradition and has permanent value *per se*, still its sacredness lies only in its usefulness to the race.

Upon this basis school administrators have come to recognize two types of teachers. One teacher sees his subject as an end in itself; he conceives his function primarily as an imparter of information; he believes his success is to be measured by the degree to which his students can give back the information they have absorbed. The other teacher conceives subject matter as a means to an end. He does not minimize the importance of its mastery, but he would

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strive for mastery in order that through such effort the student may be enabled to grow in intellectual stature. These two attitudes need not be conflicting — in many cases the teacher of the first type will accomplish the ultimate purpose in the mind of the teacher of the second type with equal effectiveness. It is a matter of point of view, but it makes a striking difference in the way in which the teacher approaches the job. The teacher of the first type is prone to reduce his work to a formula, to mechanize instruction, and to insist that every student adjust himself to the teacher's own peculiar system. The teacher of the second type focuses his attention upon the reaction of the student to the subject matter. With the former the professional interest lies in facts; with the latter it is in persons and the way they can use these facts.

The classroom teacher of the latter type, while serving as social agent to

initiate and guide thinking processes, also becomes a mental and social diagnostician, alert in ascertaining the degree to which students utilize instruction. For such a teacher there can be no distinction between teaching and administration — the two go hand in hand. In his effort to keep each individual working in an atmosphere of success, the teacher recommends shifts from time to time in the personnel of his class. These shifts aim to readjust individuals in accordance with their own rate of growth as compared with class progress. Some may be recommended for assignment to a class of exceptionally able students; others to classes where directed and supervised study is provided. At all times he seeks to find those particular fields of activity within the institution where the student may best succeed. And may it be said that no one can be in better position to discover particular aptitudes and to recommend a student

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for study in particular fields than the class teacher who, through intimate daily contact with this student, has been able to discover his peculiar slants for achievement.

Even though each teacher may assume this broader attitude toward his work within the realm of instruction, the secondary school must make a place for the teacher's activity as a personnel advisor and sponsor. The forming of attitudes on social questions, inculcating right reactions toward group behavior within the school and within the range of the student's home and social life are of tremendous significance in the formation of character. Instruction in subject matter alone will not bring about this result. The activities involving learning beyond the orbit of class instruction are too manifold. To derive a maximum of benefit from the cumulative effect of these activities, the administration in the Arsenal Technical Schools delegates

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specific phases of sponsor work to all teachers within the corps. The teachers are of two types: (1) those definitely assigned as sponsors; (2) those whose sponsor work is incidental to other activities.

Since the housing facilities provide a number of rooms equal to one half the number of members of the faculty, that half of the faculty gifted with general administrative ability is given charge of sponsor rooms with the detailed responsibilities for student guidance therein implied. Others are able to contribute to this phase of school work through supervision and direction of extra-curricular activities, athletics, debating, music, or dramatics. Rich, indeed, are the teaching opportunities of the teachers who assume sponsorship duties within these fields of student activity.

The organization of the school for sponsor opportunities for teachers is considered basic to the administration of

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the institution. The present plan is as follows: An alphabetical distribution of the student body numbering over five thousand among one hundred twenty-five sponsor-room teachers gives an average of forty to fifty students to each sponsor group. Entered in a given alphabetical formation a student who makes normal progress remains with the same sponsor for a period of six semesters. The students assemble in sponsor groups for fifteen minutes daily. On certain occasions, such as those times when extra consideration must be given to choice of studies for the following semester, the sponsor periods are lengthened. No distinction of freshman, sophomore, or junior classification is made. Student ranking is on credit basis. When the quality and quantity of credit accomplishment gives reasonable assurance, the student passes to the senior roll room on the assumption that he will graduate within two semesters.

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The three-year continuous formation on an alphabetical basis has its merits from the point of view of school machinery serving individual interests at its best. It eliminates interscholastic class "scraps" and "proms" and other social aspirations too ambitious for boys and girls who are in the boy-scout and camp-fire girl stage of development. A wholesome school social life is provided in those various clubs which are permitted within the school if they can meet the following test — "Does the club intensify rather than dissipate school interest?" Any student whose scholarship warrants it is eligible to membership in home economics, radio, chemistry, nature study, and other similar clubs. The three-year alphabetical scheme minimizes the load of home visits. The sponsor's quota of entering freshmen each semester will not exceed seven or eight. Home conditions of many of these have been learned previously through elder

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brothers and sisters. Since a high degree of student success makes unnecessary home visits in the case of many others, the sponsor has approximately between three to four new homes to visit through the school year, thus conserving much teacher energy.

The sponsor room as an institution means much in the life of a student. Three years daily in fair open weather or when sailing is close, he travels in comradeship with his sponsor who becomes the friend as described by the small boy, "who knows all about you and likes you anyhow." Should a misdemeanor disturb the even tenor of his ways, the sponsor is a friend at court in the inner office. It is the sponsor who is in the position to make constructive suggestions as to the application of discipline. Realizing that in many cases parental and family control is all too weak, the sponsor must make the most of the educational possibilities of dis-

cipline when such matters as lack of promptness, truthfulness, courtesy, obedience, honesty, or reliability are concerned. For to lack these qualities would be to fail as a citizen. Knowing the economic and social conditions within the family, the home-room teacher is invaluable as vocational advisor during the choice of study period. His live acquaintance with the successful careers of older brothers and sisters proves a veritable lodestone attracting students to emulation. His personal pull spells potency, for boys and girls are generous in response to warm human sympathy.

After three years have been completed and the credit classification of the student warrants it, he advances to a senior sponsor-room formation. The function of this classification of student body is the same as that of all other sponsor rooms. It is the means by which the daily bulletin is promulgated throughout the school; it is a centralizing bureau which checks

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up daily any administrative detail relative to the individual. This check-up, it may be emphasized, is the sponsor's opportunity to capitalize the educational value of discipline when a student has failed in the least obligation to the school or to his fellows. The senior room differentiates itself from all others in respect to the emphasis given social training as a legitimate phase of education. The senior advisor has the added responsibility in various social functions throughout the school year of teaching that degree of good form which society may reasonably expect to meet in a public secondary school graduate.

The administrative policy behind the sponsor system is for the purpose of creating a public opinion among five thousand five hundred students that will work in the operation of a wholesome school government — government which is not dominantly repressive in its nature but rather purely coöperative and help-

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ful. An analogy may be found in city control. In every community there are certain officials charged with the responsibility of local government. But these officials are able to do their work only because of the coöperation of the ninety per cent of the population who create and respect public opinion. They are officers of the law to the ten per cent, but courtesy officers to the great body of citizens within the community. Similarly in school society, the teacher stands ready to remove those students who are out of rhythm with school law. But with public opinion working constructively the teacher's job is minimized. The student body, at least the more mature section of the student body, helps much in executing school rules, but it does so as an adjunct to the faculty function as an isolated agency. By such a system of spontaneous government school authority gains much and the individual is given a chance to test

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his own mettle as a leader in group activities.

An illustration of the results of this coöperative type of student-faculty government may not be amiss. About two years ago, as a result of a citizen's criticism on street-car conduct of Technical High School students, a bulletin was read before the student body in sponsor assembly. It presented the thesis that street-car conduct was the means whereby the public judged the character of a school and that it was often possible for the entire student body to be stigmatized by the untoward actions of the few. A senior sponsor room, desirous of making a contribution to school welfare, asked permission from the executive office to work out the project of converting thoughtless fellow students into agreeable daily commuters. Enlisting the assistance of public speaking, advertising, and salesmanship classes which worked through the school

during sponsor periods, they "put across" a successful campaign for proper behavior for school children when traveling over the city's lines of communication. The system of checking up street-car conduct which they evolved and set in motion has proved so effective that it is still retained, with the result that it has been necessary to report for misconduct the names of only five students for two years.

Thus the opportunity which coöperative faculty-student government affords for participation in group life ripens into participation in a project city-wide in its application. The student thereby learns to derive pleasure from the realization that he belongs to that company of intelligent citizens whose function is ever to push back the barriers of ignorance. In so doing, whether as a leader or a follower, he fulfills his obligation held in trust from a society whose future hopes and fears must lie in his keeping.

This example of student coöperation

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in the matters of general school welfare has been mentioned as merely typical of a spirit which can be engendered in a student body through the cumulative influence of teachers who have the broader aspects of school welfare constantly in mind. And after all it is in such as this that the fruits of education become most manifest. School administration must continue to stress subject matter as means to desirable ends, and teachers must ever be kept conscious as to what those ends are. It must not be that we train men and women to become mere self-sufficient intellectual units, for intelligence must serve a higher and more useful purpose. And in order that education may contribute as it should to a better civilization, those who foster it should give wise direction in its growth. That is the supreme function of the teacher and certainly his most vital contribution to society.

CHAPTER V

Methods and Devices Which Hold the School True to Its Task of Ministering to the Individual

AS a great ocean liner, freighted to capacity with precious cargo, in propelling itself through uncertain seas must constantly ascertain through plumb line and compass whether or not there is deviation from the true course, so must a modern high school constantly utilize scientific sounding devices to test how true the school is to its own ideals. That the teacher may keep faith in the feasibility of his mission of ministering to the individual, it has been found wise to center the attention of the faculty on the study of instructional problems within the school. In the organization of the

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school and assignment of faculty duties, certain members of the faculty are delegated to serve on a committee for the analysis of problems arising in any department of school activity. This committee is able to make itself extremely serviceable to the school by warding off crystallization, which inevitably sets in when no new avenues of approach to teaching technique are sought. The membership of the committee is quite elastic. It welcomes the suggestions of any teacher who presents a live problem for solution. Such a teacher may contribute his own services for the study, and, with the approval of the principal, receives all the help he needs from sympathetic co-workers.

It may be interesting to indicate certain forms of investigation which are carried on within the research organization of the school: Many sub-committees are organized within the school for special studies. One is comprised of those

teachers who have been in attendance at schools of education either in extension classes or in summer schools and are interested in testing out in a practical way the educational theories therein propounded. Such teachers serve to break down that ingrowing tendency with respect to pedagogical methods commonly attributed to secondary school teaching. In performing this leavening function of raising teaching standards, these teachers point out specific things which should be done. This in turn inculcates a disposition on the part of others to discover what further activity should follow. As an outcome individual teachers are moved to make application of fresh principles to their own class work, to check up results, to make deductions, and to contribute the same for the general good.

The problem of the failing student presents a rich field for investigation and experimentation for this type of teacher.

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So urgent, indeed, is the need for study of this problem, which is confronting every secondary school, that it is the part of wisdom for all educators to give every encouragement to those who will honestly seek for causes and remedies. As a matter of fact, in giving attention to the problem of failing students within a school, the administrator finds an approach to many significant facts concerning the teaching efficiency of the instructional corps. In analyzing and studying failures there comes to light a whole array of elements which enter into the work of a teacher with his students: his point of view as to the relative duty toward the dull and the brilliant, his ingenuity in keeping a class all at work, his alertness in discovering the peculiar difficulties which students are having with his subject, his ability to stimulate to effort students who are avowedly indifferent, his personal reactions whether of justness or vindictiveness (as the case

may be) toward students who do not quite measure up. These are but a few of the things which, from the standpoint of supervision, come to light in very concrete form whenever a careful analysis is made of causes of failure within a school. And may it be said that in this field of study, as in no other, will an administrator find revealed so many forms of professional skill on the part of teaching to justify his faith and confidence in his staff.

In this study in the Arsenal Technical Schools definite results have been accomplished in disciplinary problems as well as in discovering the peculiar needs of students that the school was not reaching. Experience shows that cases of high school discipline seldom, if ever, arise in that group of students who are measuring up to any reasonable standard of expectation in scholarship. But within that group of students whose standard of scholastic work falls within the limits

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of the lowest two or three per cent of the student body will arise, under ordinary circumstances, ninety-five per cent of the unsocial acts which demand the attention of the disciplinary officers. For this reason attention to this group at the proper time renders a service not only to the student involved but to the citizenship standards of the entire school. In order to deal with this group in the Arsenal Technical Schools with expediency, a committee of teachers is assigned the duty of dealing with, and if possible, finding a solution, for, every case where poor standards of scholarship are indicated. At the time of each grade report, sponsor teachers are asked to report to the office the names of students who have failed to meet a certain specific scholarship test as attested by the grades received. The students so reported are called for interview at once by the committee, and if satisfactory explanation cannot be given, definite steps for remedy

are taken. Additional supervised study periods are assigned, make-up assignments are given, the home is called into conference — every device for remedying the situation is resorted to.

In pursuit of this policy of seeking out those students who are not making a reasonable degree of school success, an even more detailed study of every failure is frequently made on the basis of the following report :

REPORT OF FAILING PUPIL

Name.....	R. R.....	White	Colored
No. Absences.....	Dates.....		
In conference with the pupil, or from your record, classify absences as			
Inexcusable.....	Personal illness.....		
Family illness.....	Other causes.....		
Is absence the dominant cause of failure?			
Study periods in school:	Hour.....	Room.....	
	Hour.....	Room.....	
	Hour.....	Room.....	
Pupil's class attitude (underscore)			
Lack of interest — Inattentive			
Spasmodic — Unresponsive — Discordant			
Resentful of criticism — Bashful			
Other characteristics.....			
.....			

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Is any physical difficulty involved?.....

Is the subject naturally difficult for this pupil?.....

Is previous preparation deficient?.....

Have you had any communication with the home?.....

How?.....

Are there any home circumstances bearing on the pupil's failure? (If important, use other side for details)

To be concretely helpful tabulate the number of definite assignments which the pupil has failed to do satisfactorily, or give other information equally conclusive.

Class reports.....

Written papers.....

Tests.....

Department.....

Class.....

Hour.....Room.....

Date.....Class Teacher

On the basis of this report action is taken by the committee as follows: Where absence is the dominant cause of failure and reason therefor is not explained satisfactorily, communication is had with the home to prevent a continuance of irregularity. Where physical difficulty has been in evidence, such as defective eyesight, the student is reported to the school's department of health and the school nurse ascertains to what degree

the student is receiving medical attention which will remedy his difficulties. On the basis of such reports over two hundred cases were examined in a recent semester and many imperative situations were cared for. Where the teacher reported that "the subject was naturally difficult for the student," the task of finding out the peculiar angles of difficulty and devising means for helping the student was delegated to the head of the department. Similar procedure was followed in the case where it seemed evident that previous preparation was deficient. In working with such students department heads have discovered extremely interesting and significant situations. Where bad class attitude was indicated, the cases were turned over to a vice principal, dean of girls, or other disciplinary officer for such attention as the case seemed to warrant. The information relative to home circumstances and to definite work which the student had failed to do was

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found exceedingly valuable in determination of the most helpful method of dealing with the situation.

The study of per cent of success and analysis of failures has brought to light many significant aspects of school life. It is enlightening to know that over one fourth of all failures were caused by irregularity of attendance. This is a situation which can only be remedied by the closest coöperation of the school with the home. It is significant that the percentage of failure among colored students is over twice as great as among white students. Bad class attitude was indicated in proportionally twice as many cases in English as in mathematics, but "the subject seemed naturally difficult" for failing students in three cases for mathematics for every two so reported in English, and in two cases in Latin for every one so reported in English. Adverse attitude in class was reported for fifty per cent of all French failures but

for only five per cent of failures in Spanish. Adverse attitude for failing students was reported in greatest proportion in French, with English a close second and history running third. True, these facts are not conclusive, only thought-provoking. Again, a teacher of a special class of students who were retarded in English found that of twenty-three in the class only two had their natural mothers still living — and one of those was an invalid. Such situations gave more food for thought and an added reason for sympathetic consideration of those cases where there was evidence of lack of school success.

There is a growing sentiment in some quarters that the administration of schools is demanding that too large a portion of the energy of the faculty be centered on the poor student, and that as a consequence the needs of the good student are neglected. Such a conclusion neglects most important factors. As a matter of fact, it is oftentimes through the

efforts that are put by the administration on failures that the needs of good students are best served. To permit the dross of a student body to remain there as dross can be only a handicap to those whose purposes are earnest and sincere. It is by either forcing the poor student into action, or forcing him out of the way, that the way can be cleared for real accomplishment by those who are able. Reasonable attention to the failure group is merely the part of good housekeeping in the field of education.

All educators will agree that the most valuable aid to the school success of a student is a curriculum which meets his interests and abilities. With the wide range of offerings in the Arsenal Technical Schools, the school assumes that every student should be able to find a form of work in which he can succeed. Students failing in one line of work are carefully scrutinized by the teacher to discover in what line their aptitude may

lie. All teachers are urged to be on the alert for such cases that each student may be best served. A student in the course in auto construction with little or no ability therein showed marked aptitude in making certain drawings which the class work called for. He was sent to the head of the art department for conference and advice, transferred from auto shop to drawing, and soon became so proficient as an airbrush worker that the commercial field saw fit to bid well for his services.

But even the greatest flexibility of curriculum cannot meet all cases. Each department within a high school must strive to keep a high percentage of its students succeeding therein, and not seek chances to shift ne'er-do-wells to another line of work. To promote this standard of success each department must carefully scrutinize its work, its methods, and its purposes. Perhaps the first service which a school can render to

its students is to devise means for ascertaining with a high degree of certainty those subjects in which there is little or no chance of success for a particular student. The study of foreign language is a case in point. To succeed in the study of foreign language requires a modicum of discernment of differences in words. That even this modicum is not possessed by certain individuals is evidenced in many ways to teachers who are studying the language problem. In the Indianapolis schools students come to high school from the grades marked in English as follows: English II g, students whose ability in English has marked them superior and entitled to a semester of high school credit; English I, the student of average ability; and English I s, the student who has shown himself weak in English study in the grades, particularly technical English, that is, grammar and composition. A close scrutiny of the record of students of the latter group

who elect any foreign language (Latin, French, Spanish, or German) has shown that it is well-nigh futile for such students to attempt to study foreign language, in the first year of high school at least. The parents of all students of this group who have elected foreign language are advised by letter that the student should defer foreign language election for one year and substitute another subject pending the result of intensive drill in technical English and grammar in the freshman year of English. The school, however, accepts the decision of the home, for it recognizes the right of the student to a chance. But in most cases, the recommendation of the school is followed. Since lack of comprehension of fundamentals of English grammar has repeatedly been submitted as the dominant factor in the heavy toll of foreign language fatalities in high school, an attempt was made, in the semester beginning February 1925, to perfect

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methods of discovering those students who were foredoomed to failure. A two weeks' drill on fundamentals of English grammar applicable to Latin I, with searching tests, was provided by a Latin departmental committee. Results at the close of the term show that almost all who failed in the two weeks' preliminary work failed at the end of the term in Latin I grade. In every case, it may be said where the I. Q. rating from the grade school was low, the grade school work in English below average, and the student's work in the two weeks' drill was poor, he failed to pass in the first semester of foreign language. The combination of these three ratings seems to provide a very accurate means of prognosticating success or failure for students in foreign language study, and on this basis the school hopes to be able to advise such students to go into a field where there is greater chance for success with its attendant growth.

It may be said that in the case of students who fail to do satisfactory work in foreign language in the first semester, the school now expects the student and the home to give definite reasons why he should be permitted to continue such study rather than to go into another field of work. By this means the teachers of language may be able to serve better that group of students for whom language is most vital.

The English department with its fifty or more faculty members offers wide opportunity for seeking out abilities of individuals. Many problems for investigation and research present themselves. For the past four years a committee on grammar hurdles has been diligently preparing drills and tests in fundamental technical English throughout the department. In certain grades, classification tests for the purpose of differentiating double- and single-hour students has been prepared by the commit-

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tee. These tests serve not only to elicit the best from students of ability but also to discover those with decided inaptitude for grammar, whose training, therefore, must be intensified in other phases of English work. Opportunity for initiative and leadership is given to students of marked ability in grammar to work in statistical English, where grading of tests, recording of grades, and computing of averages is done. These exceptional students act as teacher assistants in double-hour, slow-rate classes for individual work in grammar. Compilation of statistics on grammar hurdles, as well as the general tone of English work, bears witness to the splendid fruits of the labor of the committee with respect to gain in both individual and class averages and also in the per cent passing.

Another committee in the English department has been working on the problem of outside reading. It keeps abreast of the latest bibliographies, reads

new books to evaluate points and to correlate with all other departments of the school, and finally prepares for publication a reading list for secondary students. This list, which finds its way into thousands of homes, has proved a real social contribution in raising the standard of home reading. Several other publications mark the activity of members of the English department. A late one, *The Tech Way*, has gathered in from all activities of the school those ideals and standards which have evolved from past experience. It sets forth school policy on such questions as athletics, good sportsmanship, courtesy, and appointments of dress. It initiates newcomers into the innermost thought of the school.

A very significant phase of the work of the English department has been the study of English defects of students for the purpose of formulating specific essentials of accomplishment and habit formation in each course. As a result of

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this work a definite set of minimum essentials has been set up for each student to attain within each semester. These essentials embrace spelling, punctuation, capitalization, etc., — those things which make or mar one's oral or written composition. Having set up these essentials the statistical committee of the department has been keeping an accurate record of accomplishment of classes and individual for the past four years. The marked improvement that has been made in terms of definite measures of concrete and specific accomplishment is a source of encouragement and a stimulus to further prosecution of such a policy.

In these days the educational values of various forms of high school mathematics are being questioned and with the advent of a heterogeneous population in our high schools, to many of whom algebra and geometry are but another form of puzzle working, their results must be subject to even greater scrutiny. For

graduation from Technical High School one year of mathematics is required. The school permits this year to be taken, however, either in algebra or high school arithmetic, as the purposes and interests of the student may dictate. In this way no student is forced into a form of mathematics study that is foreign to his aptitudes. For students who intend to enter technical colleges, or for those who are able in the field of mathematics, the curriculum may include the whole range of high school mathematics, including a year of trigonometry.

Due to the prestige of the subject many students in secondary schools are electing formal mathematics who have but little aptitude for it, and for such the study can only cause discouragement and loss of self-confidence. In the mathematics department, therefore, certain specific problems have arisen pressing for a solution. They may be stated as follows: 1. To find a way of determin-

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ing more readily those students whose chances of success in formal mathematics are so remote that they should be advised to confine their mathematics study to mastery of arithmetic processes. 2. To devise methods of securing a greater ratio of pronounced success among those students who have sufficient ability to work at formal mathematics with profit, educationally. 3. To furnish exceptional opportunity for students of exceptional ability.

Some entering students who elect Algebra I soon disclose their weaknesses in the fundamentals of arithmetic. When such students are discovered they are at once advised, and, in some cases, required, to transfer to a course in high school arithmetic where their weaknesses can be overcome and where their effort may be centered on fundamentals. But the problem does not end there. Success in first-year algebra is not a sure criterion of success in geometry. The abilities

that make for success in the one do not make for success in the other. Study by the research committee on this problem has up to this time produced only inconclusive results. With the use of a more highly developed technique of testing in the future perhaps more significant criteria may be discovered.

While prejudging ability is of importance as a factor in saving students from failure and consequent discouragement, the most helpful forms of professional study lie in the field of discovering methods that will be productive of a higher standard of results for those who are able to do satisfactory work. During the past few years much attention has been given by teachers and school administrators to homogeneous grouping as a device to further effective class work. In this field the mathematics department has carried on rather extended experiment. Results have been in all cases vitiated so much by other factors that

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definite assertion that homogeneous grouping in itself was either beneficial or detrimental to a whole group would be impossible. It may be said that the policy has not been barren of advantage, particularly in providing drill for weak students and an enriched curriculum for the superior ones. Upon the basis of the result obtained thus far, the policy of the school now leans to homogeneous grouping only for the extremes both ways — for example in a group of two hundred and fifty students there would not be more than one section of twenty-five students of such superior ability that they would not be well served by the ordinary method and content provided for the normal class. The same is true with regard to students of less than normal ability. In a group of two hundred and fifty students not more than twenty-five would be so poor that special methods and attention would be called for. As a consequence the school now favors a

plan of drawing off merely the extremes, leaving the remaining two hundred with their varying abilities of work together in undifferentiated classes. By this method sufficient range of ability will exist in any of these groups so that the class work will still possess normal attributes. Extreme stratification of classes can only be feasible when all teachers regard it as desirable as a professional opportunity to teach the low sections as the high ones.

The work with extremely good sections has been done in different ways. In certain cases the classes were conducted on a double-rate basis. This plan has not proved desirable as a permanent policy. In too many cases have students who took the double-rate work shown superficial knowledge of the subject matter studied. Rather does the school favor for exceptionally able students an enrichment of the courses by more intensive work within an area of subject matter

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instead of making the study extensive and superficial. The ways by which able students may best be served will always be a subject for continuous earnest investigation.

For poor sections the study is just as important and in many respects much more perplexing. Elimination of certain relatively unimportant phases of subject matter to allow time for drill on the more vital aspects of the subject is one method of attack. Recent attempts to meet the needs of those students have centered in assignment of such students to double-period classes. Because of the fact that giving such students double-teacher time is an added burden of expense, an experiment has been tried (as mentioned before) of assigning to such classes double the normal number of students. While this plan is still in the experimental stage, there are evidences that it has possibilities. The results so far are not uniform, the concrete evi-

dences through tests are not convincing, and the reactions of teachers to the plan are conflicting. So far, the greater proportion of teachers working with such classes favor the policy.

An effective device in Algebra I, which represents students entering without the distinction of advanced standing in Algebra II g from the grades, has been worked out by a group of mathematics teachers who are interested. By means of a series of elimination contests in which students in the subject competed as a part of regular class-time activities, twenty-five students from as many classes were singled out as attaining an average of over ninety-five per cent. As a reward they were presented in auditorium assembly with diplomas signed by the principal for excellence in mathematical ability. The publicity, it is hoped, will serve to establish the quality of work teachers should expect from these students as well as an enviable reputation to be sustained.

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In the sciences, because of an unusually complete and well-manned laboratory program, each student receives much individual attention. Due to the fact that students are carefully guarded in the choice of sciences so that they elect that branch which meets their interests, the failures in these lines of work are very few.

In the social studies especial attention has been given to the organization of the program of courses so that every type of student might be given those phases of social study from which he can profit most. The Arsenal Technical Schools were pioneers among that large number of secondary schools throughout the United States in adopting a ninth-year course in civics. A description of the course as organized in the Arsenal Technical Schools is given in Chapter II, pages 46-50. Two lines of European history, a two-year and a one-year course, are given to meet the needs of students whose interests in

history are at variance. A required course in American history is given in the third year with particular emphasis upon the development of American political and economic institutions. For students who are potential leaders of political thought a course in American government and government problems is offered in the fourth year. These courses above named together with industrial history and economic geography comprehend a range of study designed to meet every type of student who comes to the school.

Especial attention is being given to formulating specific objectives in each course, particularly to seeking the significant historical truth for especial stress. Analysis of various forms of difficulties which students have in social study is being made—inability to read with comprehension, failure to do logical thinking, etc. New means of analysis of such abilities through reading tests and word knowledge tests are being

used with a degree of results which gives encouragement for the future. For weak students, double-period, double-size classes have been organized, and these have proved strikingly successful in the history department. Accomplishment of students in such classes after a semester's work measures practically equal to that of a normal class, based on results of departmental testing. But the fine reaction of students to the instruction in such classes, the interest that they show, and the new spirit that develops toward the subject is more concrete evidence of good results than any system of numerical measurement could ever reveal.

Repeating students, that is, those who have failed in courses and must repeat for credit, are always a problem for any teacher when such students must be taught with a group. To repeat a course is generally a bore to such a student and oftentimes results in a loss of interest in school work entirely. Because of the

fact that one course in history is but little, if any, preparation for the next one, the department has adopted a policy of permitting no student to repeat a course except upon the recommendation of the original teacher. No credit is given for any course not passed — the student merely fails and tries for credit again in an entirely new field of study. The results of this policy have been almost wholly favorable — the effect upon class groups as a whole has been good because it rids the department of the drag of repeaters.

All these departmental studies are mentioned merely as illustrative of the way in which a large corps of teachers with definite teaching purposes in mind can work together in shaping the work of a school to meet the needs of each individual student. Of course the easy way is to standardize instruction and to make the individual conform thereto. The better way is to formulate means to administer

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instruction so that the unique problems of every individual may be met.

A committee on school statistics embraces activities far-reaching in its services to the school. It assembles all standard mental tests that are being used in educational fields and in departments of employment in industry and trade. These are available singly or in sets for such teachers as may see fit to use them. Tabulation of results is turned over to student assistants working under the auspices of the office production department. Per cents of success and failure in the various departments as reported by their respective heads are charted by the committee on statistics. The comparative results are most effective in visualizing for all teachers concerned the monetary costs of every school activity. As a matter of fact there is no compilation of results, whether it be per cent of honor roll, elimination of failures, increased attend-

ance, per cent of part-time students or any other matter which falls within the activity of the statistical department that does not prove an incentive to further investigation on the part of the faculty.

In a school as comprehensive in curriculum as the Arsenal Technical Schools with widely diversified types of teachers and their manifold personal and professional interests, the work of the committees described above is especially constructive. All problems with which they work are broad enough and vital enough to have bearing upon every individual teacher's relation to the school. No more applicable material, therefore, than the results they offer can be found for the purpose of professional discussion for departmental meetings with various heads and faculty meetings with the principal.

It is not the intention to give a complete statement of every form of investigation

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which is conducted through this committee, but rather to indicate the form of administrative procedure which supports and encourages such studies. It is not the spirit of the school to separate the functions of research from the functions of instruction, but rather so to direct research activities that every teacher may have a part in analyzing the teaching process and its results. In such an organization no teacher can feel that he is deprived of any opportunity to make whatever contribution he can to scientific professional study. And furthermore, it is by such activity that the teacher may keep himself constantly awake to the import of his calling, to see his goal constantly before him and to keep his soul alive by the realization that not only the school but he himself is doing his best for every student under his care.

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